

Remarks

Claims 1 and 273-400 have been canceled. Claims 33-272 remain pending. Applicants respectfully request reconsideration and withdrawal of the outstanding rejections in view of the following remarks.

I. Claim Amendments

Claims 1 and 273-400 have been canceled without prejudice. Applicants reserve the right to pursue the canceled subject matter in a related application. Claims 33, 34, 49, 50, 65, 66, 81, 82, 97, 98, 113, 114, 129, 130, 145, 146, 161, 162, 177, 178, 193, 194, 209, 210, 225, 226, 241, 242, 257, and 258 have been amended to replace "first protein" and "second protein" with "an amino acid sequence" and "a polypeptide," and to recite "wherein said isolated protein specifically binds an antibody that specifically binds to SEQ ID NO:[2 or 4]." These amendments are supported by the specification as originally filed, for example, on page 5, lines 3-5 and on page 40, line 27 to page 42, line 4. Thus, the amendments do not constitute new matter under 35 U.S.C. §132 and entry of the amendments is respectfully requested.

II. Interview Summary Record

Applicants' representatives thank Supervisory Patent Examiner Gary Kunz and Examiner Robert Landsman for the courtesy of the March 5, 2002 interview regarding the above-identified application pursuant to 37 C.F.R. §1.133 and M.P.E.P. §713.04.

During the Interview, the outstanding Office Action, Paper No. 18, and the pending application were discussed. In particular, the discussion focused on the rejection of claims 33, 34, 49, 50, 65, 66, 81, 82, 97, 98, 113, 114, 129, 130, 145, 146, 161, 162, 177, 178, 193, 194, 209, 210, 225, 226, 241, 242, 257, 258, 273, 274, 289, 290, 305, 306, 321, 322, 337, 338, 342, 343, 347, 348, 352, 353, 357, 358, 368, 369, 379, 380, 390 and 391 under 35 U.S.C. §112, first paragraph, for lack of enablement and for lack of written description and under 35 U.S.C. §112, second paragraph as being indefinite.

During the Interview, Applicants' representatives and the Examiners discussed mutually acceptable claim language to resolve outstanding issues in the prosecution of the

present application. Applicants' representatives indicated written description support and presented evidence already of record to demonstrate that the claimed VEGF-2 proteins are adequately described and enabled by both the pending specification and the applications to which the pending application claims priority, and that therefore the specification fulfills both the purpose and notice function of 35 U.S.C. §112.

III. Rejections Under 35 U.S.C. § 112, First Paragraph – Enablement

A. Status of ATCC Deposits

The Examiner rejected claims 97-192, 305-336, 342-346, 352-356, and 379-400 under 35 U.S.C. § 112 as lacking enablement because there is allegedly no indication in the specification as to the public availability of ATCC Deposit Nos. 75698 and 97149.

In response, Applicants point out that the preliminary amendment filed on July 18, 2000 indicates that ATCC Deposit Nos. 75698 and 97149 are maintained under the terms of the Budapest Treaty and will be made available to a patent office signatory to the Budapest Treaty. Applicants note that the name and address of the depository was also corrected in the preliminary amendment. Therefore, Applicants are fully compliant with 37 C.F.R. §1.808 and the rejection of claims 97-192, 305-336, 342-346, 352-356, and 379-400 under 35 U.S.C. § 112, first paragraph, is moot. Accordingly, Applicants respectfully request that the rejection be reconsidered and withdrawn.

B. Enablement

The Examiner rejected claims 33-400 under 35 U.S.C. §112, first paragraph as lacking enablement for claims that are “at least 90% identical,” that are “fragments,” or that are “at least 30 contiguous amino acids” of SEQ ID NOS: 2, 4, or ATCC Deposit No. 75698 or 97149, indicating that the claim scope is allegedly too broad. Paper No. 18, page 4.

In response, and solely for the purpose of expediting prosecution and subsequent allowance of the pending application, Applicants have canceled claims 273-400 and have amended claims 33, 49, 65, 81, 97, 113, 129, 145, 161, 177, 193, 209, 225, 241, and 257, as suggested by the Examiner during the interview, to recite, “wherein said isolated protein specifically binds an antibody that specifically binds to SEQ ID NO:[2 or 4].” Because the specification teaches the skilled artisan how to make and use a protein 90%

or 95% identical to SEQ ID NO:2 or 4 while retaining biological function as claimed, the claims as amended are fully enabled under 35 U.S.C. §112, first paragraph. Applicants note that rejected claims, 34, 50, 66, 82, 98, 114, 130, 146, 162, 178, 194, 210, 226, 242, and 258 have not been amended in view of the fact that these claims either already recite or depend from a claim that already contains language as suggested by the Examiner. Applicants also note that claims 34, 50, 66, 82, 98, 114, 130, 146, 162, 187, 194, 210, 226, 242, and 258 were rejected solely because of their dependency on the above-mentioned claims. Applicants submit that claims 33-272 are fully enabled and respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. §112, first paragraph, for lack of enablement.

IV. Rejections Under 35 U.S.C. § 112, First Paragraph – Written Description

The Examiner rejected claims 33-400 under 35 U.S.C. §112, first paragraph for lack of written description, specifically stating that the “scope of the claims includes numerous structural variants, and the genus is highly variant because of a significant number of structural differences between genus members is permitted.” Paper No. 18, page 6.

In response, and solely for the purpose of expediting prosecution and subsequent allowance of the pending application, Applicants have canceled claims 273-400 and have amended claims 33, 49, 65, 81, 97, 113, 129, 145, 161, 177, 193, 209, 225, 241, and 257, as suggested by the Examiner during the interview, to recite, “wherein said isolated protein specifically binds an antibody that specifically binds to SEQ ID NO:[2 or 4].” Because the specification describes a protein 90% or 95% identical to SEQ ID NO:2 or 4 that retains biological function as claimed, the claims as amended are fully supported by the specification as originally filed under 35 U.S.C. §112, first paragraph. Applicants note that rejected claims, 34, 50, 66, 82, 98, 114, 130, 146, 162, 178, 194, 210, 226, 242, and 258 have not been amended in view of the fact that these claims either already recite or depend from a claim that already contains language as suggested by the Examiner. Applicants also note that claims 34, 50, 66, 82, 98, 114, 130, 146, 162, 187, 194, 210, 226, 242, and 258 were rejected solely because of their dependency on the above-mentioned claims. Accordingly, Applicants respectfully request reconsideration and withdraw of the

rejection against claims 33-272 under 35 U.S.C. §112, first paragraph, for lack of written description.

V. Rejections Under 35 U.S.C. § 112, Second Paragraph

The Examiner rejected claims 33-400 under 35 U.S.C. §112, second paragraph as indefinite, specifically stating that the wording of the claims is confusing “since they recite ‘first protein’ and ‘second protein.’” Paper No. 18, page 7. The Examiner also suggested alternative claim language that would be acceptable. Solely for the purpose of expediting prosecution of the pending application, Applicants have amended the pending claims to remove the “first protein” and “second protein” language.

The Examiner also rejected claims 33-160 under 35 U.S.C. §112, second paragraph as indefinite, specifically stating that the claims are confusing since they “recite both the ‘mature’ and ‘preprotein’ forms of the claimed proteins. It is not clear what constitutes, or differentiates, these forms.” Paper No. 18, page 7. During the Interview, Applicant’s representatives explained not only that a skilled artisan would readily distinguish between the mature protein and preprotein forms as claimed, but also that the specification explicitly differentiates between the mature and preprotein forms of a given protein:

The polypeptide having a leader sequence is a preprotein and may have the leader sequence cleaved by the host cell to form the mature form of the polypeptide. The polynucleotides may also encode for a preprotein which is the mature protein plus additional 5' amino acid residues. A mature protein having a prosequence is a preprotein and is an inactive form of the protein. Once the prosequence is cleaved an active mature protein remains.

Specification, page 11, lines 15-21. Thus, based on the description in the specification of “mature,” “preprotein,” and “proprotein,” it would be clear to the skilled artisan “what constitutes, or differentiates, these forms,” therefore the claims are not indefinite. Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C §112, second paragraph.


Conclusion

In view of the foregoing remarks, Applicants believe they have fully addressed the Examiner's concerns and that this application is now in condition for allowance. An early notice to that effect is urged. A request is made to the Examiner to call the undersigned at the phone number provided below if any further action by Applicants would expedite allowance of this application.

If there are any fees due in connection with the filing of this paper, please charge the fees to our Deposit Account No. 08-3425. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Dated: May 22, 2002

Respectfully submitted,

By 
Michele M. Wales (Registration No.: 43,975)
Attorney for Applicant

HUMAN GENOME SCIENCES, INC.
9410 Key West Avenue
Rockville, MD 20850
Phone: 301-610-5772

Enclosures
MMW/AKR/lcc

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: Hu et al.

Application No.: 09/257,272

Group Art Unit: 1647

Filed: February 25, 1999

Examiner: R. Landsman

For: Vascular Endothelial Growth Factor 2

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims

Please cancel claims 1 and 273-400 without prejudice or disclaimer.

Please amend claims 33, 34, 49, 50, 65, 66, 81, 82, 97, 98, 113, 114, 129, 130, 145, 146, 161, 162, 177, 178, 193, 194, 209, 210, 225, 226, 241, 242, 257, and 258 as follows.

33. (Amended) An isolated protein comprising ~~a first protein~~ an amino acid sequence at least 90% identical to a mature ~~portion of a second protein comprising the amino acid sequence~~ form of a polypeptide of SEQ ID NO:2, wherein said isolated protein specifically binds an antibody that specifically binds to SEQ ID NO:2.

34. (Amended) The isolated protein of claim 33, wherein said ~~first protein~~ amino acid sequence is at least 95% identical to a mature ~~portion of a second protein comprising~~ form of a polypeptide comprising the amino acid sequence of SEQ ID NO:2.

49. (Amended) An isolated protein comprising ~~a first protein~~ an amino acid sequence at least 90% identical to a mature ~~portion of a second protein comprising the amino acid sequence~~ form of a polypeptide of SEQ ID NO:4, wherein said isolated protein specifically binds an antibody that specifically binds to SEQ ID NO:4.

50. (Amended) The isolated protein of claim 49, wherein said ~~first protein~~ amino acid sequence is at least 95% identical to a mature ~~portion of a second protein form of~~ a polypeptide comprising the amino acid sequence of SEQ ID NO:4.

65. (Amended) An isolated protein comprising ~~a first protein~~ an amino acid sequence at least 90% identical to a proprotein ~~portion of a second protein comprising the amino acid sequence~~ form of a polypeptide of SEQ ID NO:2, wherein said isolated protein specifically binds to an antibody that specifically binds to SEQ ID NO:2.

66. (Amended) The isolated protein of claim 65, wherein said ~~first protein~~ amino acid sequence is at least 95% identical to a proprotein ~~portion of a second protein~~ form of a polypeptide comprising the amino acid sequence of SEQ ID NO:2.

81. (Amended) An isolated protein comprising ~~a first protein~~ an amino acid sequence at least 90% identical to a proprotein ~~portion of a second protein comprising the amino acid sequence~~ form of a polypeptide of SEQ ID NO:4, wherein said isolated protein specifically binds to an antibody that specifically binds to SEQ ID NO:4.

82. (Amended) The isolated protein of claim 81, wherein said ~~first protein~~ amino acid sequence is at least 95% identical to a proprotein ~~portion of a second protein~~ form of a polypeptide comprising the amino acid sequence of SEQ ID NO:4.

97. (Amended) An isolated protein comprising ~~a first protein~~ an amino acid sequence that is at least 90% identical to a mature ~~portion of a second protein~~ form of a polypeptide encoded by the cDNA contained in ATCC Deposit No. 75698, wherein said isolated protein specifically binds an antibody that specifically binds to SEQ ID NO:4.

98. (Amended) The isolated protein of claim 97, wherein said ~~first protein~~ amino acid sequence is at least 95% identical to a mature ~~portion of a second protein~~ form of a polypeptide encoded by the cDNA contained in ATCC Deposit No. 75698.

113. (Amended) An isolated protein comprising ~~a first protein~~ an amino acid sequence that is at least 90% identical to a mature ~~portion of a second protein~~ form of a

polypeptide encoded by the cDNA contained in ATCC Deposit No. 97149, wherein said isolated protein specifically binds an antibody that specifically binds to SEQ ID NO:2.

114. (Amended) The isolated protein of claim 113, wherein said first ~~protein~~amino acid sequence is at least 95% identical to a mature ~~portion of a second protein~~form of a polypeptide encoded by the cDNA contained in ATCC Deposit No. 97149.

129. (Amended) An isolated protein comprising a ~~first protein~~ an amino acid sequence that is at least 90% identical to a proprotein ~~portion of a second protein~~form of a polypeptide encoded by the cDNA contained in ATCC Deposit No. 75698, wherein said isolated protein specifically binds an antibody that specifically binds to SEQ ID NO:4.

130. (Amended) The isolated protein of claim 129, wherein said first ~~protein~~amino acid sequence is at least 95% identical to a proprotein ~~portion of a second protein~~form of a polypeptide encoded by the cDNA contained in ATCC Deposit No. 75698.

145. (Amended) An isolated protein comprising a ~~first protein~~ an amino acid sequence that is at least 90% identical to a proprotein ~~portion of a second protein~~form of a polypeptide encoded by the cDNA contained in ATCC Deposit No. 97149, wherein said isolated protein specifically binds an antibody that specifically binds to SEQ ID NO:2.

146. (Amended) The isolated protein of claim 145, wherein said first ~~protein~~amino acid sequence is at least 95% identical to a proprotein ~~portion of a second protein~~form of a polypeptide encoded by the cDNA contained in ATCC Deposit No. 97149.

161. (Amended) An isolated protein comprising a ~~first protein~~ an amino acid sequence that is at least 90% identical to a ~~second protein~~ polypeptide encoded by the cDNA contained in ATCC Deposit No. 75698, wherein said isolated protein specifically binds an antibody that specifically binds to SEQ ID NO:4.

162. (Amended) The isolated protein of claim 161, wherein said first ~~protein~~amino acid sequence is at least 95% identical to a ~~second protein~~ polypeptide encoded by the cDNA contained in ATCC Deposit No. 75698.

177. (Amended) An isolated protein comprising ~~a first protein~~ an amino acid sequence that is at least 90% identical to a ~~second protein polypeptide~~ encoded by the cDNA contained in ATCC Deposit No. 97149, wherein said isolated protein specifically binds an antibody that specifically binds to SEQ ID NO:2.

178. (Amended) The isolated protein of claim 177, wherein said ~~first protein~~ amino acid sequence is at least 95% identical to a ~~second protein polypeptide~~ encoded by the cDNA contained in ATCC Deposit No. 97149.

193. (Amended) An isolated protein comprising ~~a first protein~~ an amino acid sequence that is at least 90% identical to a ~~second protein polypeptide~~ comprising amino acids 71 to 396 of SEQ ID NO:2, wherein said isolated protein specifically binds an antibody that specifically binds to SEQ ID NO:2.

194. (Amended) The isolated protein of claim 193, wherein said ~~first protein~~ amino acid sequence is at least 95% identical to a ~~second protein polypeptide~~ comprising amino acids 71 to 396 of SEQ ID NO:2.

209. (Amended) An isolated protein comprising ~~a first protein~~ an amino acid sequence that is at least 90% identical to a ~~second protein polypeptide~~ comprising amino acids 47 to 396 of SEQ ID NO:2, wherein said isolated protein specifically binds an antibody that specifically binds to SEQ ID NO:2.

210. (Amended) The isolated protein of claim 209, wherein said ~~first protein~~ amino acid sequence is at least 95% identical to a ~~second protein polypeptide~~ comprising amino acids 47 to 396 of SEQ ID NO:2.

225. (Amended) An isolated protein comprising ~~a first protein~~ an amino acid sequence that is at least 90% identical to a ~~second protein polypeptide~~ comprising amino acids 24 to 396 of SEQ ID NO:2, wherein said isolated protein specifically binds an antibody that specifically binds to SEQ ID NO:2.

226. (Amended) The isolated protein of claim 225, wherein said ~~first protein~~ amino acid sequence is at least 95% identical to a ~~second protein~~ polypeptide comprising amino acids 24 to 396 of SEQ ID NO:2.

241. (Amended) An isolated protein comprising a ~~first protein~~ an amino acid sequence that is at least 90% identical to a ~~second protein~~ polypeptide comprising amino acids 1 to 396 of SEQ ID NO:2, wherein said isolated protein specifically binds an antibody that specifically binds to SEQ ID NO:2.

242. (Amended) The isolated protein of claim 241, wherein said ~~first protein~~ amino acid sequence is at least 95% identical to a ~~second protein~~ polypeptide comprising amino acids 1 to 396 of SEQ ID NO:2.

257. (Amended) An isolated protein comprising a ~~first protein~~ an amino acid sequence that is at least 90% identical to a ~~second protein~~ polypeptide comprising amino acids -23 to 396 of SEQ ID NO:2, wherein said isolated protein specifically binds an antibody that specifically binds to SEQ ID NO:2.

258. (Amended) The isolated protein of claim 257, wherein said ~~first protein~~ amino acid sequence is at least 95% identical a ~~second protein~~ polypeptide comprising amino acids -23 to 396 of SEQ ID NO:2.